The Effect of Incentives on Survey Quality and Attrition Bias

Experimental Evidence from the Second TREE Cohort

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Outline

Introduction

- High response rates and low panel attrition are key for studies such as TREE (Transitions from Education to Employment).
- A subpopulation of special interest in TREE are adolescents from disadvantaged backgrounds, as these adolescents have elevated risks of remaining without upper secondary education.
- The very same group, however, is difficult to study because of high nonresponse and panel attrition.
- In the pretest sample of the second TREE cohort we therefore implemented a survey experiment to evaluate the effect of (small) monetary incentives.
- We expected that such incentives may work particularly well for the critical subpopulation of disadvantaged adolescents.

Outline

Hypotheses

- Various studies show that (unconditional) monetary incentives do have an effect on response rates. Less clear, however, are the exact mechanisms behind these effects and the conditions under which incentive work well or not.
- One theoretical angle to look at survey participation is to conceptualize participation as a *rational decision*. In this case, respondents balance costs of participation (time and effort) with benefits that may have individual or social and intrinsic or extrinsic components.

	intrinsic	**extrinsic**
individual	enjoyment, curiosity, interest in content of survey	symbolic appreciation, material/monetary gratification
social	contribution to public good, increase scientific knowledge, etc.	benefits for in-group

- Monetary incentives work by increasing the individual-extrinsic utility component.

Hypotheses

- An alternative approach sees survey participation as a specific form of *social exchange* and highlights the importance of *reciprocity*.
- According to this view also symbolic gifts without a high material value can be effective. Furthermore, monetary incentives can be counterproductive because they change the nature of the exchange and crowd out intrinsic motivation.
- In any case, it is reasonable to assume that the motivation to participate in a survey may differ between subpopulations and that monetary incentives will have differential effects.
- For example, we expect intrinsic motivation to be low among adolescents from disadvantaged backgrounds. At the same time, due to their low economic resources, monetary incentives should work better in this subpopulation.

Hypotheses

- H1: Incentive effects will be generally low in our study because we use a sample of respondents with relatively high intrinsic motivation.
- H2: A gift certificate will have a stronger effect in our study than plain money because it has more of a symbolic character and is less likely to crowd out intrinsic motivation.
- H3: Monetary incentives will be effective primarily for adolescents from disadvantaged backgrounds. This is relevant because response rates are particularly low for these adolescents.

Outline

Sample and experimental groups

- Our study focuses on a pretest sample of 541 adolescents who participated in 2015 in a (class-room) pretest for a Swiss large scale assessment study and who provided valid contact details so that they can be contacted one year later.
- Providing these contact details was voluntary, so our sample is a positive selection of adolescents with high intrinsic motivation.
- The respondents were randomly divided into three (evenly sized) experimental groups:
  - No incentive (control group)
  - Unconditional incentive: rail check (10 CHF)
  - Unconditional incentive: cash (10 CHF)
- Respondents then contacted for a first follow-up interview in 2016. They were interviewed by CATI or, as a secondary mode, by paper-and-pencil questionnaire.

Outcomes

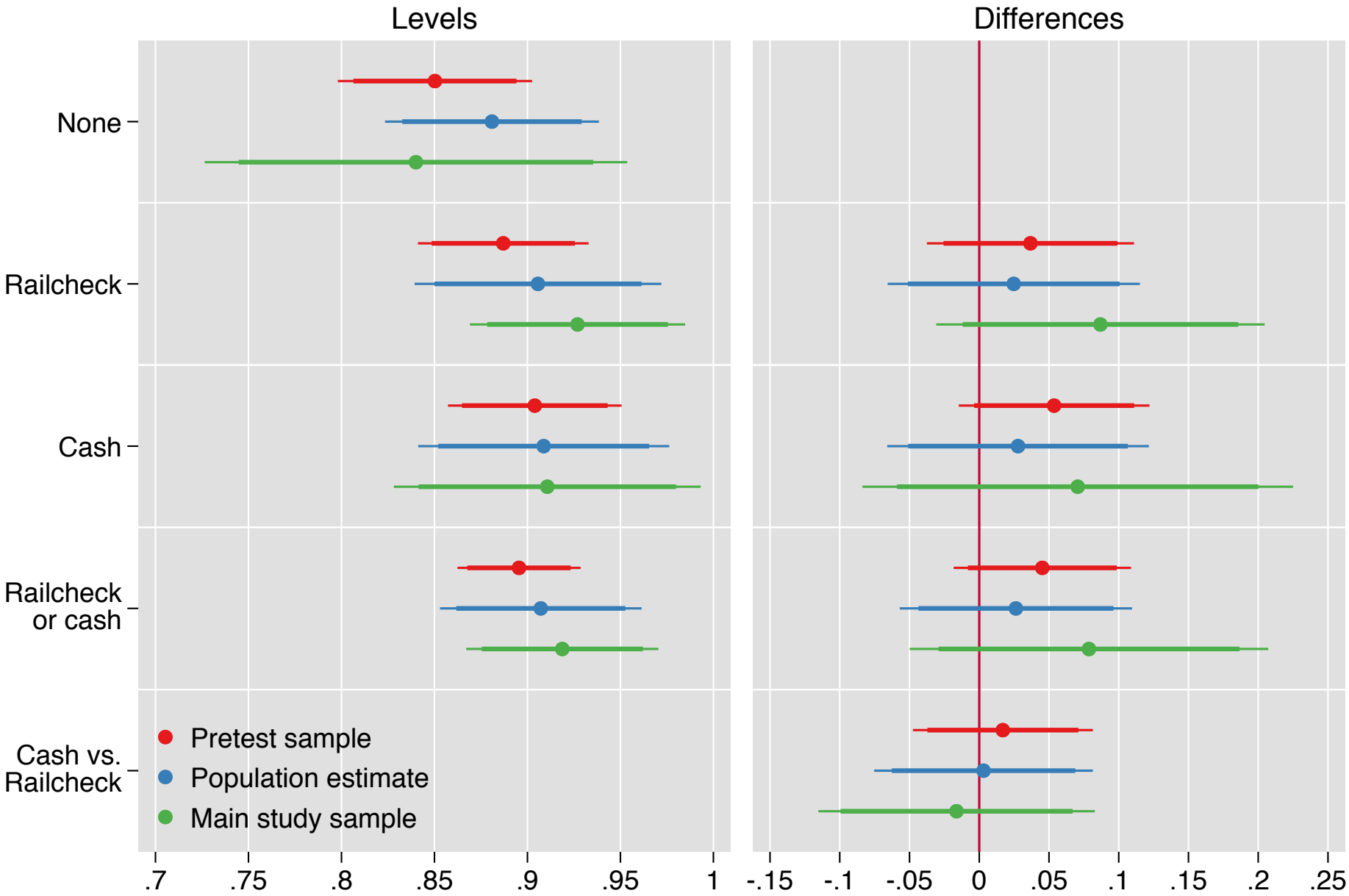
- We look at effects on various outcomes.
  - response rate
    - ★ proportion of respondents who participated in the interviews (CATI or mail questionnaire)
  - CATI proportion
    - ★ proportion of telephone interviews among all interviews
  - panel drop-out rate
    - ★ proportion of respondents who actively refused participation in future waves or did not agree to data linkage across waves
  - etc.

Types of results

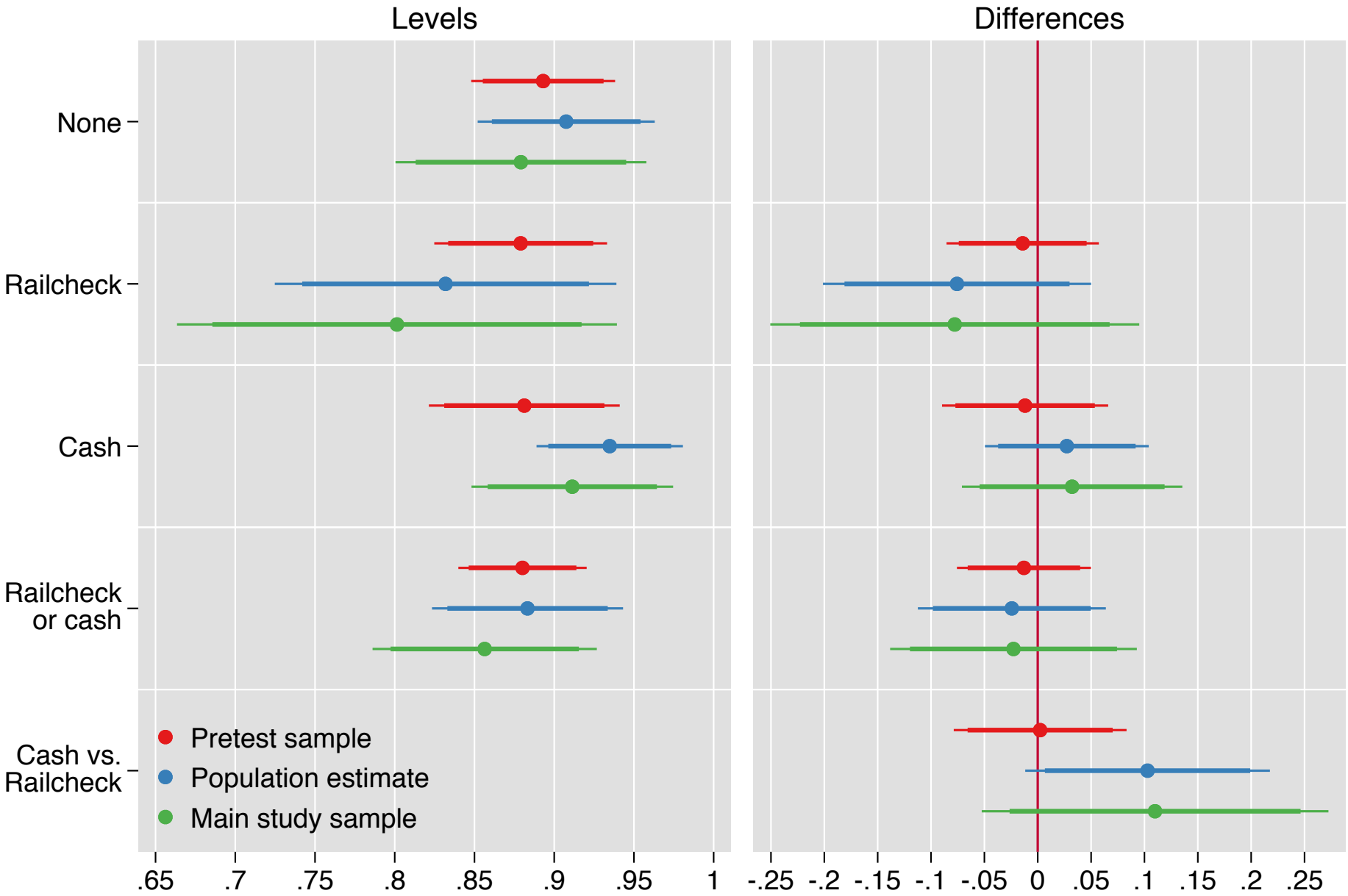
- As indicated, our sample is selective. We therefore report raw results as well as results for which the sample composition has been adjusted using reweighting.
- Raw (unweighted) pretest sample results
  - Descriptive incentive effects in the pretest sample at hand.
- Population reweighted results
  - Estimates of the incentive effects for the relevant population of school leavers. The weights compensate selectivity due to sample design (overrepresentation of small cantons) as well as differential cooperation (providing contact details).
- Main sample reweighted results
  - Estimates of the incentive effects to be expected in the main sample of the TREE study. The composition of the pretest sample and the main sample is quite different because the cooperation rate (respondents providing contact details) could be substantially increased in the main study. Weights are computed using entropy balancing (Hainmueller 2012).

Outline

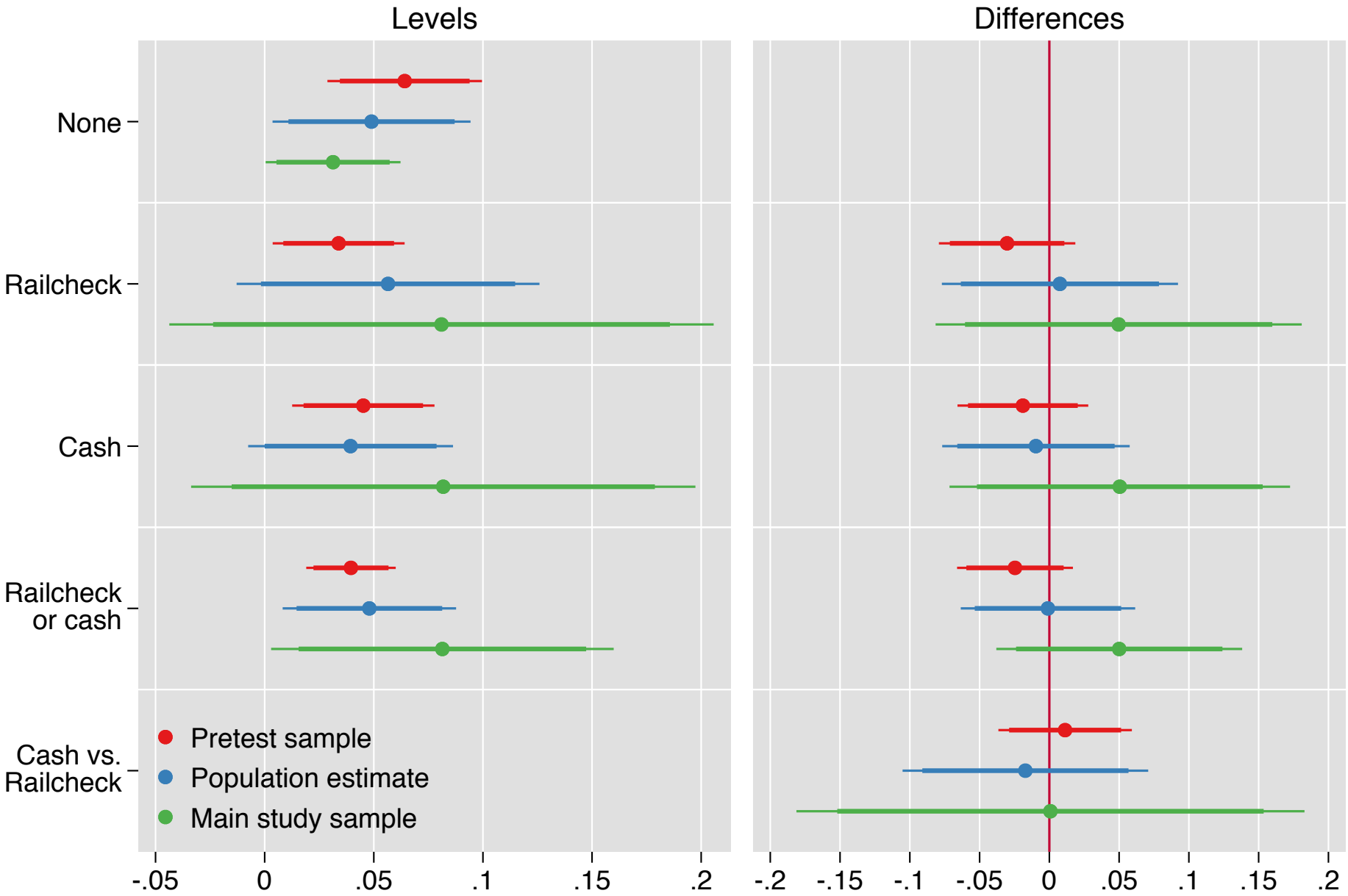
Incentive effects on response rate



Incentive effects on CATI proportion



Incentive effects on panel drop-out

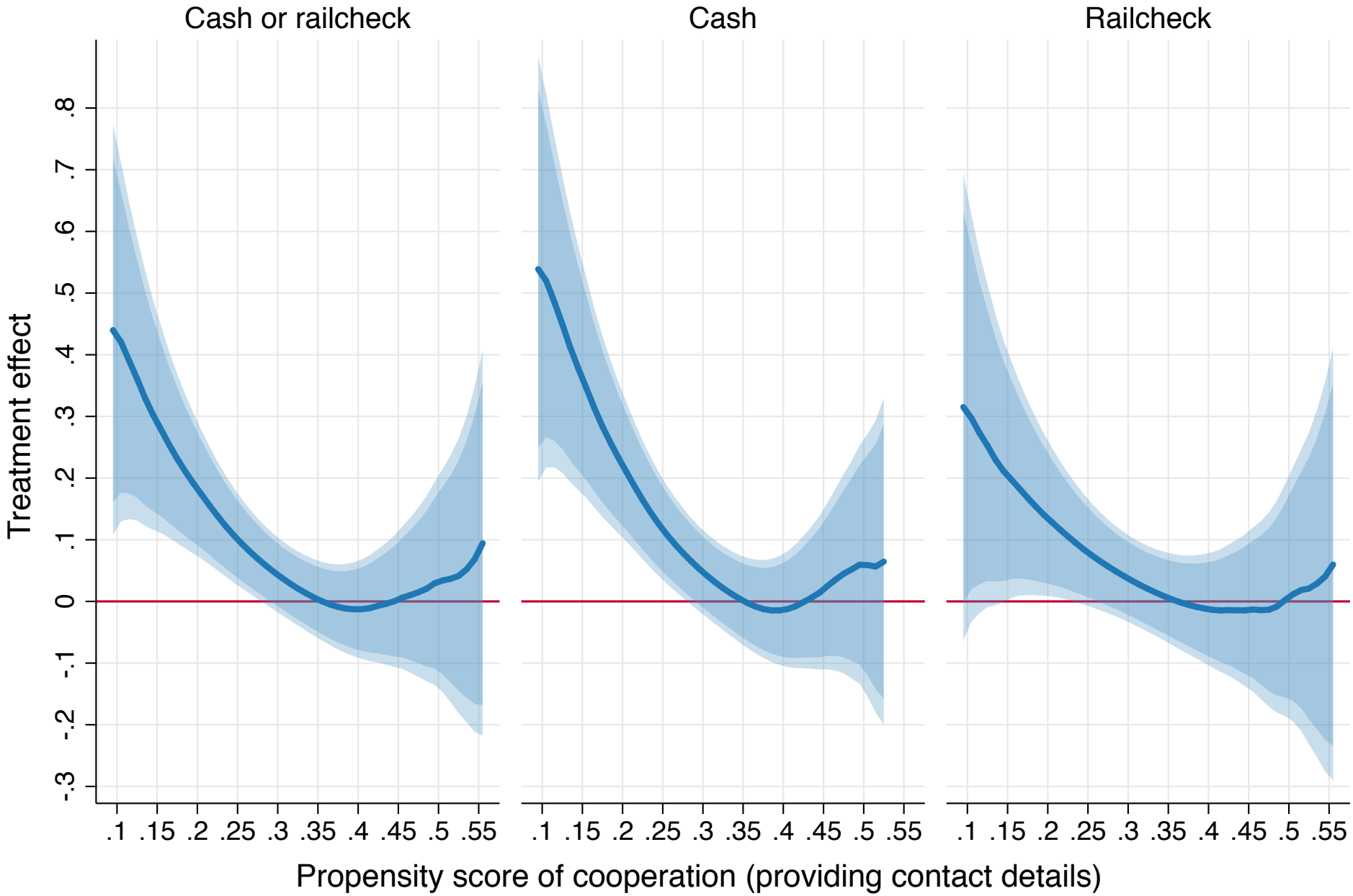


Outline

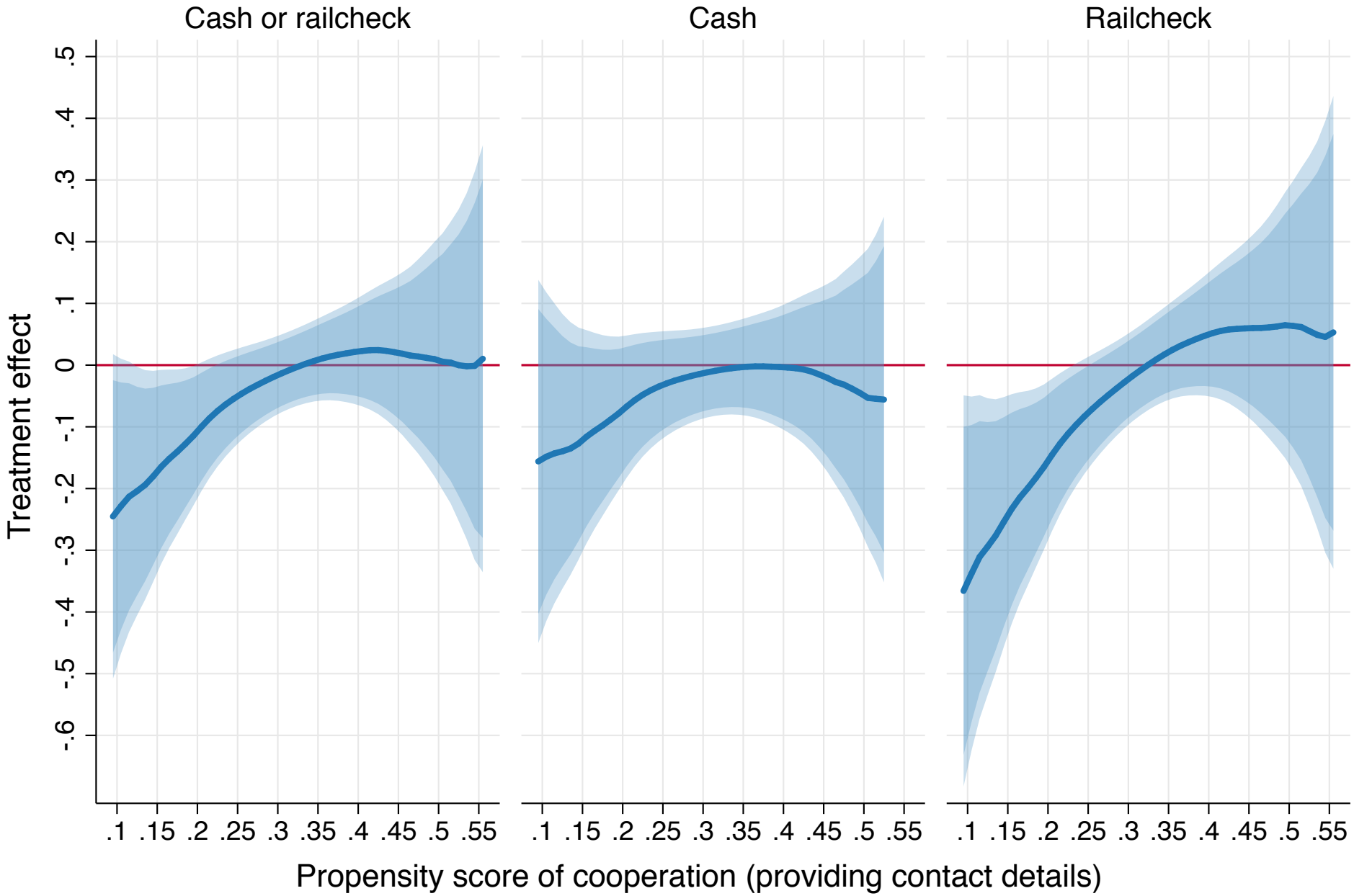
Incentive effects by cooperation probability

- With respect to H3 we are interested in how incentive effects depend on characteristics of respondents.
- Adolescents from disadvantaged backgrounds are underrepresented in our sample, but for many research questions they are very relevant and it would be good to have good coverage of this group.
- In general, there are characteristics that are related to low survey participation and we are interested in whether incentives can be used to counterbalance such selectivity.
- We use heterogeneous treatment effect analysis as suggested by Xie et al. (2012) to evaluate whether incentive effects are related to the propensity score of cooperation.
- The propensity score of cooperation is the estimated probability of providing contact details (see above). Important predictors are, for example, gender, migration background, parental education, and satisfaction with school.

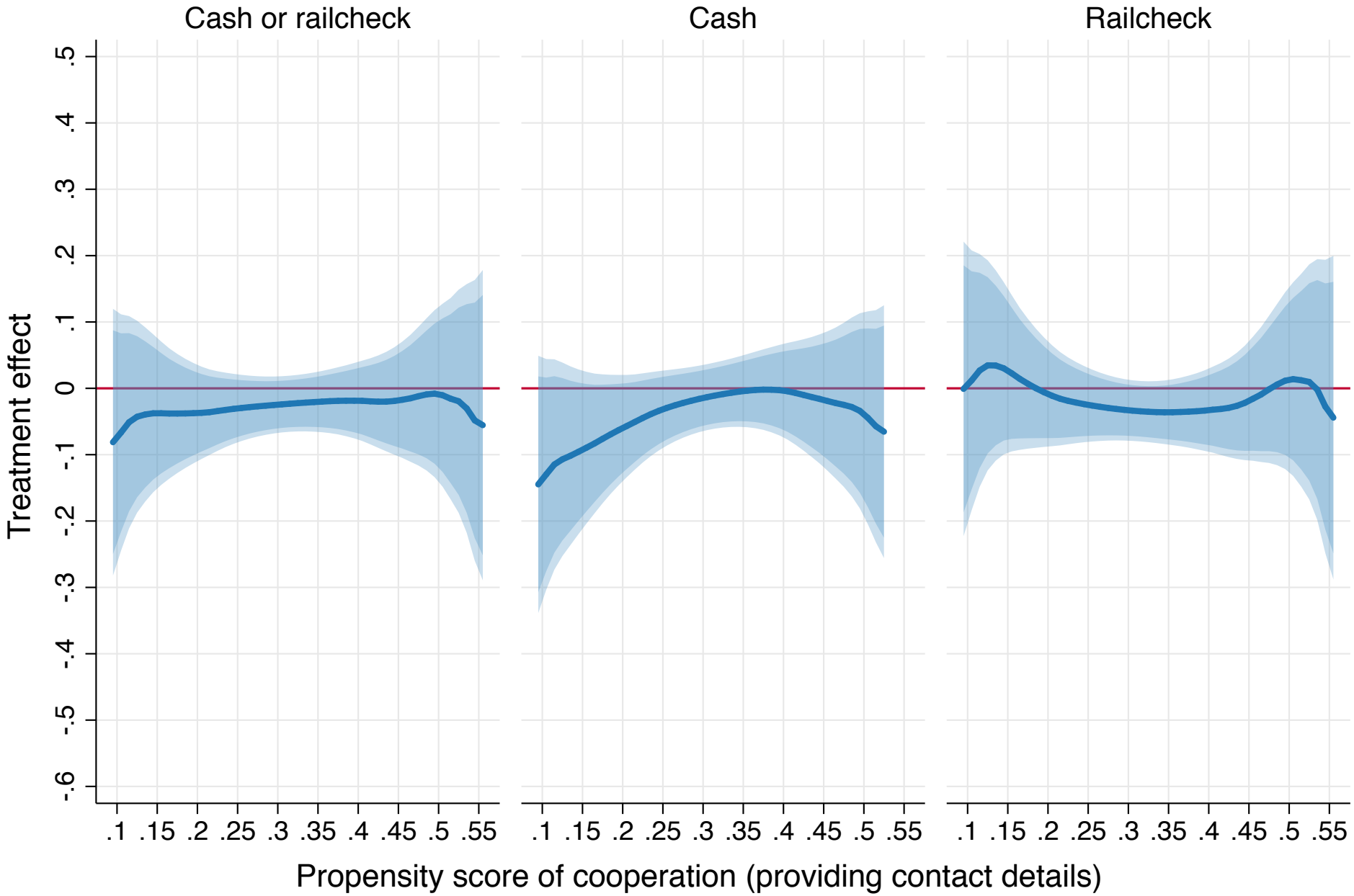
Incentive effects on response rate



Incentive effects on CATI proportion



Incentive effects on panel drop-out



Outline

Conclusions

- Compared to the literature, incentive effects indeed seem to be relatively low in our sample (H1; effect of about 5 percentage points on the participation rate).
- However, we could not confirm our expectation, that gift certificates have a stronger effect than plain cash (H2).
- With respect to H3 we find clear evidence for heterogeneous effects. Incentive effects are stronger for adolescents with low cooperation probabilities; for adolescents with high cooperation the effects vanish.
  - From a practical perspective this raises the question whether targeted incentives should be used. Such targeted incentives seem to be effective and cost efficient, but there might also be good arguments against their usage.

References

- Hainmueller, Jens (2012). Entropy Balancing for Causal Effects: A Multivariate Reweighting Method to Produce Balanced Samples in Observational Studies. Political Analysis 20(1):25–46.
- Xie, Yu, Jennie E. Brand, Ben Jann (2012). Estimating Heterogeneous Treatment Effects with Observational Data. Sociological Methodology 42(1):314–347.